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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,856	04/30/2001	Ajit B. Dandekar	2001B036	3184
23455	7590	09/03/2004	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY			DANG, THUAN D	
P O BOX 2149			ART UNIT	PAPER NUMBER
BAYTOWN, TX 77522-2149			1764	
DATE MAILED: 09/03/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/845,856

Applicant(s)

DANDEKAR ET AL.

Examiner

Thuan D. Dang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 11-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 11-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Degnan et al (5,536,894) in consideration with Cheng et al (5,557,024).

Degnan discloses a process of alkylation of an aromatic such as benzene with ethylene or propylene in the presence of a catalyst containing MCM-56 and phosphorus (the abstract; col. 10, lines 28-67; col. 14, lines 7-11).

In example 15, Degnan discloses a catalyst containing 2.2 wt% of phosphorus.

It appears that Degnan does not disclose the phase of the aromatic (see the entire patent for details). However, Cheng discloses that an alkylation in the presence of a MCM-56 catalyst can be operated in gas or liquid phase (the abstract; col. 12, lines 29-34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Degnan by operating a liquid-phase alkylation process to arrive at the applicants' claimed process since there is an advantage for operating the reaction in the liquid phase (see column 4, lines 7-11).

Degnan is silent as to the content of phosphorus in the catalyst as called for in claims 13 and 14 and does not disclose using MCM-22 and MCM-49. However, the content of phosphorus is only the matter of selection and Degnan discloses that MCM-22 and MCM-49 have similar characteristics with MCM-56 (see the whole patent to Degnan).

It would have been obvious to one having ordinary skill in the art at the time in the art at the time the invention was made to have modified the Degnan process by selecting an appropriate amount of phosphorus since it is expected that the Degnan catalyst containing any amount of phosphorus would yield similar results.

It would have been obvious to one having ordinary skill in the art at the time in the art at the time the invention was made to have modified the Degnan process by using

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MCM-22 in the place of MCM-56 in the catalyst of Degnan to arrive at the applicants' claimed catalyst since it is expected that using similar zeolites for preparation of the Degnan catalyst would yield catalysts having similar activities.

The condition as called for in claims 19 and 20 can be found on column 3, lines 15-25 of Cheng and column 10, lines 38-37 of Degnan.

Regarding claims 23, applicants claims a comparison the catalyst used in the claimed process (with phosphorus) with a unrelated catalyst (without catalyst). This limitation does **not** make the claimed process different from the applied art process which is also operated by using a catalyst containing phosphorus.

### ***Response to Arguments***

Applicant's arguments filed 8/16/2004 have been fully considered but they are not persuasive.

A similar argument that which catalyst contains the phosphorus has been fully responded by the examiner in the previous examiner's answer.

The reason that a liquid phase should be employed for operating the process combined between Degnan and Cheng is discussed in the above new ground rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

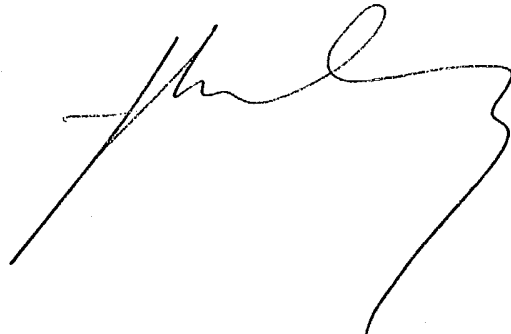
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

09845856.20040901  
September 1, 2004

A handwritten signature in black ink, appearing to be 'Thuan D. Dang', written over a horizontal line.